

CLIMATOLOGICAL DATA FOR APRIL, 1913.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

GENERAL SUMMARY.

The month in the Lake Region was warmer than usual, with an abundance of sunshine. Precipitation was somewhat irregularly distributed, being, as a rule, deficient over the western half of the district and in the extreme east, and somewhat in excess of the normal over most of the remaining sections. Relative humidity was lower than the average for the season, and wind movement was in general more active, although storm winds were comparatively infrequent. But little damage resulted from either general or local disturbances during the month. Over the northwestern sections vegetation had made practically no growth at the end of the period, but in eastern sections the warm weather served to advance the season by from two to three weeks. These conditions, together with the early disappearance of snow in the Champlain watershed, interfered much with the maple-sugar industry, both as regards the quality and the quantity of the crop.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States.	Mean temperature.	Departure from normal.	Mean daily range.	Mean precipitation.	Departure from normal.	Greatest precipitation in 24 hours.	Mean snowfall.	Number of days.			Prevailing wind direction.
								With 0.01 inch or more.	Clear.	Partly cloudy.	
Minnesota.....	42.3	+2.8	16.7	1.61	-0.65	1.10	2.7	5	17	7	6 ne.
Wisconsin.....	44.2	+2.1	16.3	2.10	- .38	1.62	1.3	6	17	5	8 ne.
Illinois.....	48.8	+2.9	15.5	1.91	- .97	.53	T.	9	13	5	12 n.
Indiana.....	49.7	+2.2	18.9	2.36	- .42	1.29	0	8	16	4	10 n.
Upper Michigan.....	40.7	+2.8	17.2	1.70	- .18	2.50	7.2	6	17	5	8 s.
Lower Michigan.....	45.5	+1.6	17.6	2.87	+ .54	2.50	0.1	8	14	6	10 nw.
Ohio.....	48.6	+ .7	15.1	3.02	+ .15	1.72	T.	9	14	5	11 n.
Pennsylvania.....	46.2	+1.5	13.9	2.03	- .37	.76	.2	12	11	10	9 w.
New York.....	45.9	+3.0	17.8	2.93	+ .32	2.32	2.1	10	13	8	9 w.
Vermont.....	44.2	+2.8	20.2	1.81	- .30	.94	1.4	10	11	9	10 s.

TEMPERATURE.

The mean temperature was above normal generally in all portions of the Lake Region. While a few stations in Lower Michigan and northern Ohio reported temperatures lower than the average, the departures were, in most cases, less than 1°. The central sections of the district experienced the more nearly seasonal conditions, and the warmth was most pronounced over the eastern and western sections, where the excess approached +3°.

The 1st-4th, 10th-18th, and 21st-25th were general warm periods, while the last two days of the month were above normal over the western sections as well, and in New York and Vermont the warm weather of the third period continued until the 28th. The warmest days occurred as a rule during the third decade, when temperatures rose to values of 20° or more above

the daily averages in practically all portions of the district. While the 19th-21st and several days of the closing week brought cool weather and frosty conditions to many localities, the lowest temperatures of the month were recorded generally between the 6th and 10th. However, the minimum temperatures were much above previous April records. The absolute range for the district as a whole was 83°; from 91° at Keene Valley, N. Y., on the 25th, to 8° at St. Ignace, Mich., on the 20th.

PRECIPITATION.

In point of time, precipitation was quite well distributed, there being three periods of from two to four days each, beginning with the 2d, 9th, and 21st, respectively. The heaviest precipitation occurred generally during the first of these periods, although the individual daily measurements were not exceptional. A few stations in Michigan and New York reported 24-hour falls of more than 2 inches, but as a rule the records for this interval showed considerably smaller amounts.

In the western Lake Superior region the precipitation of the first portion of the month was nearly all in the form of snow. Over the central, southern, and extreme eastern portions of the district, however, there was comparatively little snowfall, and such as occurred melted within a short time. At many stations in these sections, moreover, none occurred during the course of the month. Over the New York section the fall averaged 2.1 inches, no station receiving more than 10 inches, except Lake Placid Club, where 17.6 inches were recorded. Practically all snow over the colder portions of the district had disappeared by the middle of the month, although some was observed in the forests of upper Michigan as late as the 27th.

ICE AND NAVIGATION.

Generally speaking, there was less ice in the Great Lakes than during April of last year. The fields at the Straits of Mackinac held until the 19th, when a channel was broken through; and windrowed ice at Whitefish Point prevented passage into Superior until the 23d, and considerable difficulty was encountered by boats at several times thereafter. At both points the opening was about three days later than the average date for the past 20 years. Where winter navigation is not maintained, local traffic at most points in all lakes, except Superior, had been opened by April 20, and the display of storm warnings for the season was resumed on the 15th. In Lake Champlain navigation opened on the 1st, about two weeks earlier than usual.

RIVERS AND FLOODS.

In Michigan the general rains of the 2d to 4th, occurring with already high waters in the rivers of the State, caused the flood stage to be exceeded at several

points, especially in the Saginaw watershed. Timely warnings had been issued, however, and resulting damage was slight.

At the beginning of the month the water level in Lake Champlain reached nearly to the top of the docks at Burlington, Vt. Waves, driven by the high west wind of the 2d, submerged the breakwater and did considerable damage along the lake front, undermining wharves, tearing boathouses from their fastenings, etc. On the 7th the water stood at 8 feet 4 inches, the highest recorded stage since 1903. On the 8th the water began to recede, and by the 21st had fallen 1½ feet.

EARTHQUAKE.

On the evening of April 28 slight earthquake shocks were reported over the Champlain and St. Lawrence Valleys from northern New York and Vermont to Ottawa. The time is given in practically all reports as 7.30 p. m. (seventy-fifth meridian), but the observer at Northfield, by a close comparison of his station clock with the time signals of the Western Union Telegraph Co. on sev-

eral succeeding days, established the duration of the vibratory motion as between 7.30.10 and 7.30.20 p. m. The shocks were described generally in the press over the affected region and were observed at the Weather Bureau stations at Northfield and Burlington, Vt., and at Oswego and Canton, N. Y.

APRIL LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan and Huron.	Lake Erie.	Lake Ontario.
Above tidewater at New York.....	Feet. 601.66	Feet. 580.80	Feet. 574.00	Feet. 247.86
Above or below:				
Stage of March, 1913.....	+ .12	+ .64	+1.56	+1.15
Stage of April, 1912.....	+ .27	+1.32	+1.72	+2.54
Mean stage of April last 10 years.....	- .05	+ .40	+1.58	+1.50
Highest recorded stage.....	-1.03	-2.43	-.18	-.57
Lowest recorded stage.....	+1.12	+1.58	+2.74	+3.02
Probable change during May.....	+ .30	- .30	+ .30	+ .50

TABLE 1.—Climatological data for April, 1913. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelting.	Number of rainy days.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Minnesota.</i>																				
Cloquet.	Carlton.	800	2	42.2		86	30	11	6†	57	1.91	-0.39	1.10	3.8	5	16	6	8	se.	
Duluth.	St. Louis.	1,133	42	40.4	+ 2.0	79	15	23	7	45	1.75	-0.39	0.67	4.5	8	15	6	9	ne.	
Floodwood.	do.	1,257	6																State Forest Exp. Station.	
Stephens Mine.	do.	1,500	6	43.7		86	16	12	6	50	1.99	-1.63	0.90	T.	6	18	6	6	M. H. Schussler.	
Two Harbors.	Leke.	614	19	40.7	+ 1.6	73	18	22	6†	40	0.50	-0.30	5.0	2	16	10	4	4	Oliver Iron Mining Co.	
Virginia.	St. Louis.	1,434	19	44.6	+ 4.9	83	15†	19	6	46	1.90	+ 0.07	1.10	T.	4	18	7	5	G. W. Watts.	
<i>Wisconsin.</i>																			Oliver Iron Mining Co.	
Appleton.	Outagamie.	795	12	46.8	+ 3.2	80	30	25	8†	36	2.48	+ 0.03	0.76	1.5	7	19	4	7	e.	
Ashland.	Ashland.	615	22	42.6*	+ 3.0	87*	30	12*	7	58*	1.11	-0.84	0.43	3.5	7	16	0*	7	ne.	
Bayfield.	Bayfield.	635	4	44.0*	+ 4.0	84*	30	11*	12	51*	1.25	-0.87	0.68	2.0	5	18*	0*	7	nw.	
Cecil.	Shawano.	804	15	44.4	+ 1.3	78	30	21	20	42	2.23	-0.51	0.40	3.5	9	14	8	8	sw.	
Cornucopia.	Bayfield.	640	1	41.1		83	30	13	7	51	1.52	-0.51	0.40	2.0	5	14	8	8	ne.	
Crandon.	Forest.	1,080	18	42.8	+ 1.4	77*	30	18*	20†	44*	1.51	-0.61	0.70	7.0	5	18*	3*	8	nw.	
Florence.	Florence.	1,233	22	41.5*	+ 2.2	81	30	20*	20†	45*	2.26	-0.15	1.62	T.	5	21	3	6	e.	
Fond du Lac.	Fond du Lac.	860	27	46.6	+ 1.8	82	23	21	20	45	1.42	-0.83	0.48	T.	5	21	3	6	ne.	
Grand River Locks.	Marquette.	770	17	47.8		80	23†	25	7	43	2.08	-0.49	0.82	1.5	6	20	4	6	nw.	
Green Bay.	Brown.	617	27	44.9	+ 4.2	78	23	26	7	34	2.37	-0.07	0.78	0.5	8	14	4	12	ne.	
High Falls.	Marinette.	1,125	1	43.6		80	23	15	20	54	1.74	-0.55	0.50	T.	5	17	6	7	ne.	
Iron River.	Bayfield.	1,096	4	43.4		88	30	15	6	82	3.00	-1.20	2.0	6	22	3	5	sw.		
Keweenaw.	Keweenaw.	590	42	42.6		73	17	25	7	39	2.25	-0.90	0.5	6	20	3	7	s.		
Manitowoc.	Manitowoc.	616	62	42.8	+ 0.5	74	17	26	20	34	2.06	-0.43	0.93	2.0	5	15	6	9	ne.	
Menasha.	Winnebago.	764	16								1.74	-0.16	0.79	0.5	5	21	1	8	ne.	
Menomonie Falls.	Waukesha.	842	4	45.7*		79	23	24*	20	40*	2.03	-1.24	T.	6	17*	4*	8	nw.		
Milwaukee.	Milwaukee.	681	43	45.7	+ 3.9	80	23	30	20	31	3.00	+ 0.30	1.59	0.5	11	15	6	9	ne.	
New London.	Outagamie.	762	17	46.6	+ 2.1	81	30	28	20†	41	2.35	-0.48	0.66	0	5	15	4	11	ne.	
Oconto.	Oconto.	590	22	43.8	+ 0.4	89	23	23	20	46	1.95	-0.59	0.46	2.0	5	21	0	9	ne.	
Oshkosh.	Winnebago.	744	24	46.2	+ 1.2	80	23†	24	7	41	1.64	-0.92	0.80	1.0	4	20	4	6	n.	
Pine River.	Waushara.	900	18	47.6	+ 4.4	82	17†	23	20†	45	2.38	-0.16	0.90	2.3	6	12	13	5	ne.	
Plum River.	Door.	588	5	38.9		68	23	22	20	29	2.82	-0.80	T.	6	16	2	12	s.		
Plymouth.	Sheboygan.	843	3	45.5		79	23	25	20	38	1.95	-0.56	1.6	8	15	8	7	ne.		
Port Washington.	Ozaukee.	713	20	43.8	+ 0.7	80	17	28	7	40	3.06	+ 0.10	0.82	0.8	7	13	7	10	se.	
Racine.	Racine.	633	16	46.6	+ 1.8	78	17	30	20†	39	1.78	-0.76	0.50	T.	8	14	6	10	n.	
Ripon.	Fond du Lac.	1,031	3	47.6		78	20†	24	7	39	1.60	-0.65	0	0	8	15	4	11	sw.	
Sheboygan.	Sheboygan.	831	14	43.2	+ 0.4	75	17	22	20	38	2.89	+ 0.29	0.67	T.	5	15	5	10	ne.	
Sturgeon Bay.	Door.	600	14	40.6	+ 0.9	71	17	20	42	2.66	-0.64	T.	6	14	9	7	ne.			
Superior.	Douglas.	701	4	40.0		80	30†	18	7	51	2.19	-0.97	3.0	10	14	11	5	ne.		
Waupaca.	Waupaca.	857	18	46.4	+ 2.1	84	30	21	21	50	2.18	-0.48	0.63	1.0	5	15	7	8	n.	
<i>Illinois.</i>																			U. S. Weather Bureau.	
<i>Indiana.</i>																			U. S. Weather Bureau.	
Auburn.	Dekalb.	874	17	48.6	+ 2.1	81	22	25	7†	45	2.68	+ 0.15	0.72	0	10	16	0	14	nw.	
Berne.	Adams.	849	4	49.6		79	22†	26	7	38	3.21	-0.98	0.40	1.29	0	8	15	6	9	ne.
Fort Wayne.	Allen.	856	17	49.8	+ 0.3	78	22	27	7	32	2.54	-0.40	1.29	0	11	16	3	11	u.	
Hammond.	Lake.	598	22	51.6	+ 4.1	82	23	24	6	45	1.82	-1.01	0.55	0	6	14	7	9	.....
Howe.	Lagrange.	886	8																A. A. Wade.	
Notre Dame.	St. Joseph.	712	2	48.6		79	22	26	7	34	1.84	-0.57	0	8	16	7	7	n.		
Whiting.	Lake.	606	4	50.4		81	23	31	6	40	2.04	-0.61	0	8	17	4	9	D. H. Boyd.		
<i>Michigan—Upper Peninsula.</i>																			Duluth, S. S. & Atl. Ry.	
Baraga.	Baraga.	623	11	42.0	+ 4.5	82	23	12	3	45					5	17	3	10	ne.	
Bergland.	Ontonagon.	1,300	3	42.5		83	30	10	6†	50	1.36	-0.63	0.76	2.6	7	14	5	11	Frank McMonigal.	
Calumet.	Houghton.	1,246	25	40.0	+ 2.7	82	30	21	6	39	0.89	-1.20	0.27	7.0	5	20	2	8	E. S. Grierson.	
Chatham.	Alger.	875	12	36.4	+ 0.3	65	29	12	8	48	1.00	-0.82	0.50	10.0	3	20	3	7	Upper Peninsula Exp. Sta.	
Deer Park.	Luce.	610	12	36.7	+ 1.2	76	23†	25	8	34	1.01	-0.10	0.50	5.0	1	19	2	9	Mrs. Sarah E. McGraw.	
Detour.	Chippewa.	585	12															Ervin Vincent.		
Eagle Harbor.	Keweenaw.	622	14	41.2		80	30	18	20	40	3.30	-2.50	T.	2	22	0	8	T. J. Bennets.		
Escanaba.	Delta.	612	40	37.8	+ 0.6	62	23	20	8	28	1.45	-0.62	0.76	2.6	7	14	5	11	U. S. Weather Bureau.	
Ewen.	Ontonagon.	1,147	14	42.4	+ 3.2	83	30	13	7	50	1.56	-0.27	0.69	14.0	5	20	0	10	W. B. Hatfield.	
Grand Marais.	Alger.	610	12															Mrs. Lena Truedell.		
Green.	Ontonagon.	622	2															T. A. Green.		
Houghton.	Houghton.	668	12	40.2	+ 3.4	86	30	20	8	51	1.30	-0.73	0.56	2.1	10	14	10	6	U. S. Weather Bureau.	
Humboldt.	Marquette.	1,536	16	39.5	+ 3.2	80	30	12	1	50	1.60	-0.07	0.40	16.0	5	19	1	10	w.	
Iron Mountain.	Dickinson.	1,111	12	44.8	+ 3.8	83	23	19	20	41	2.05	-0.68	0.67	6.5	6	18	7	3	Duluth, S. S. & Atl. Ry.	
Iron River.	Iron.	1,504	16	41.6	+ 3.0	82	30	10	20	50	2.65	+ 0.27	0.80	3.0	7	18	9	3	Chapin Mining Co.	
Ironwood.	Gegebie.	1,520	10	43.7	+ 5.2	81	30	21	5†	38	2.23	+ 0.32	0.68	6.0	7	18	4	8	Victor D. Laing.	
Ishpeming.	Marquette.	1,536	13	40.9	+ 2.1	79	23†	18	20	41	1.61	-0.39	0.40	16.1	6	15	0	0	J. V. Brennan.	
Isle Royale.	Keweenaw.	610	6															J. A. Malone.		
Mackinac Island.	Mackinac.	831	12			73	24											M. I. State Park Com.		
Maple Ridge.	Delta.	7	39.8			75	23	19	1	39	2.05	-0.80	0	4	19	9	2	Herman Johnson.		
Marquette.	Marquette.	734	42	41.2	+ 3.7	84	23	18	8	41	3.00	+ 1.01	1.39	18.8	7	13	7	10	U. S. Weather Bureau.	
Menominee.	Memominee.	581	14	42.1	+ 2.4	76*	17	24*	8	42*	3.35	+ 1.50	2.17	2.5	6	21	3	6	Chicago & Northwestern Ry.	
Munising.	Alger.	631	16	38.7	+ 3.2	76	23													

TABLE 1.—Climatological data for April, 1913. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of fully cloudy days.		
<i>Michigan—Lower Peninsula—Continued.</i>																				
Arbela.	Tuscola.	728	17	45.5	+ 0.9	80	24	21	20	37	3.76	+ 0.80	0.91	0	7	2	13	15	sw.	Wm. Atkin.
Armada.	Macomb.	24	45.4	+ 1.4	78 ^a	22	22 ^a	21	38 ^a	3.72	+ 1.38	1.19	T.	9	8	11	11	ne.	R. O. Gould.	
Battle Creek.	Cahoun.	822	29	47.6	+ 0.1	80	24	24	20	39	2.89	+ 0.69	0.96	0	9	16	4	10	ne.	Elmer E. Sager.
Bay City.	Bay.	593	17	46.0	+ 2.4	81	24	23	21	42	3.57	+ 0.85	0.98	0	6	20	6	4	ne.	Pere Marquette R. R.
Benzonia.	Benzie.	832	16	43.8	+ 1.8	78	23	21	20	35	2.93	+ 0.43	0.73	T.	7	16	7	7	nw.	Wallace Nutting.
Big Rapids.	Mecosta.	906	17	42.6	+ 2.6	79	23	20	20	46	1.92	- 1.16	0.70	0	5	15	7	8	e.	Sup't. Water Works.
Blissfield.	Lenawee.	687	1	48.9	.....	80	23 ^f	26	8 ^f	37	2.34	.....	0.58	.....	7	8	10	12	ne.	Harry Watson.
Bloomingdale.	Van Buren.	9	54.3	.....	80	23	23	8	36	1.43	.....	0.36	T.	8	20	0	10	n.	John M. Haven.	
Cadillac.	Wexford.	1,293	4	43.1	.....	73	23	20	20	37	2.45	.....	0.83	.....	8	18	4	8	n.	Cadillac Water & Light Co.
Cassopolis.	Cass.	903	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Central R. R.
Charlevoix.	Charlevoix.	610	35	42.8	+ 2.1	80	23	20	19	40	3.80	+ 2.08	2.08	0	6	15	6	9	w.	Pere Marquette R. R.
Charlotte.	Eaton.	9	47.2	.....	82	24	20	20	43	2.21	.....	1.00	2.0	5	16	4	10	ne.	City of Charlotte.	
Cheboygan.	Cheboygan.	611	23	42.4	+ 2.2	87	23	20	24	41	2.45	- 0.73	0.90	0.2	5	11	15	4	nw.	E. A. Bouchard.
Clinton.	Lenawee.	830	23	48.2	+ 1.6	79	22 ^f	23	8 ^f	41	3.21	+ 0.91	0.77	0	8	16	4	10	sw.	David Woodward.
Coldwater.	Branch.	984	16	48.4	+ 1.9	79	23 ^f	26	7 ^f	39	3.45	+ 0.50	0.75	0	8	11	8	11	n.	Lake Shore & Mich. S. R. R.
Croton.	Newaygo.	685	5	46.5	.....	77	23	20	20	40	3.53	.....	0.92	0	8	10	12	8	sw.	Gr. Rs. Muskr. Power Co.
Detroit.	Wayne.	730	42	47.4	+ 1.9	78	24	28	8	31	2.87	+ 0.54	1.20	T.	10	12	6	12	ne.	U. S. Weather Bureau.
Durand.	Shiawassee.	799	5	42.4	.....	79	23	21	8	26	2.68	.....	0.68	0	8	13	6	11	sw.	Chief Train Dispatcher.
East Tawas.	Iosco.	590	16	42.3	+ 1.0	70	23	22	21	33	2.71	+ 0.42	0.80	.....	7	19	3	8	ne.	Detroit & Mackinaw Ry.
Eloise.	Wayne.	640	16	47.6	+ 1.3	80	23 ^f	25	20	36	3.29	+ 1.12	1.05	T.	9	14	5	11	n.	John Gilmore.
Five Channels.	Iosco.	0	43.8 ^b	.....	80 ^b	23	21 ^b	20	43 ^b	3.31	.....	1.40	.....	T.	6	16 ^b	2 ^b	10 ^b	nw.	Au Sable Electric Co.
Flint.	Genesee.	730	24	45.8	+ 1.4	80	22 ^f	24	8 ^f	34	3.45	+ 1.35	0.90	0	10	16	1	13	n.	William L. Fisher.
Frankfort.	Benzie.	580	9	40.2	.....	58	16 ^f	26	20	22	2.75	.....	1.00	.....	5	19	0	11	s.	Geo. Morency.
Ganges.	Allegan.	665	4	46.6	.....	79	17	22	21	41	2.93	.....	0.86	0	9	15	4	11	nw.	H. H. Hutchins.
Gaylord.	Otsego.	1,367	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Michigan Central R. R.	
Gladwin.	Gladwin.	794	17	44.8	+ 0.4	82	24	20	20	43	4.05	+ 2.04	2.50	0	5	20	5	5	nw.	Geo. R. Smith.
Grand Haven.	Ottawa.	628	42	44.4	+ 0.4	73	23	24	20	28	2.98	- 0.36	0.77	T.	9	16	6	10	ne.	U. S. Weather Bureau.
Grand Rapids.	Kent.	707	24	48.3	+ 2.1	81	23	25	20	34	2.45	0.00	0.74	T.	11	14	6	10	ne.	Do.
Grape.	Monroe.	625	23	48.4	+ 1.4	83	24 ^f	25	20	35	3.14	+ 0.75	0.73	0	9	11	7	12	n.	Joseph W. Morris.
Grass Lake.	Jackson.	989	7	46.4	.....	80	24	22	20	41	2.86	.....	0.80	0	7	16	0	14	sw.	Menzo Conklin.
Gravling.	Crawford.	1,147	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. N. Insley.
Greenville.	Montcalm.	802	1	47.3	.....	81	24	22	20	47	3.70	+ 1.78	1.20	0	6	12	9	9	n.	Michigan Pickle Co.
Harbor Beach.	Huron.	635	25	43.2	+ 2.2	82	23	27	9	32	3.70	+ 0.82	0.87	0	6	18	3	9	sw.	Pere Marquette R. R.
Harrison.	Clare.	1,159	20	44.4	+ 1.9	80	23	18	21	42	3.22	+ 0.82	1.23	T.	9	15	3	12	se.	Do.
Harrisonville.	Alcona.	616	29	40.8	+ 1.7	79	23	20	20	35	4.18	+ 1.59	1.36	1.2	9	15	5	10	nw.	D. W. Mitchell.
Hart.	Oceana.	698	21	49.8	+ 4.4	78	23	28	14	36	1.81	- 0.81	0.73	0	6	10	14	6	w.	Pere Marquette R. R.
Haves.	Huron.	620	23	43.6	+ 0.2	81	24	12	6	38	2.93	+ 0.77	1.15	0	5	13	7	10	n.	C. F. Liepprandt.
Highland.	Oakland.	1,006	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. D. De Garmo.
Hillsdale.	Hillsdale.	1,150	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. L. Herron.
Holland.	Ottawa.	610	7	47.4	.....	79	23	26	7 ^f	36	2.13	.....	0.66	T.	10	16	5	9	nw.	City of Holland.
Houghton Lake.	Roscommon.	0	42.8	.....	79	23	19	20	38	3.32	.....	1.23	T.	9	15	3	12	e.	James H. Ostrander.	
Howell.	Livingston.	924	21	46.4	+ 1.4	79	24	22	20	34	3.05	+ 0.77	0.90	0	8	16	5	9	sw.	Frank Sharp.
Ivan.	Kalkaska.	24	43.4	+ 1.9	79	23	20	20	43	1.56	- 0.50	0.50	1.0	1	11	13	8	9	nw.	O. L. Giddings.
Jackson.	St. Clair.	927	16	47.8	+ 1.1	81	24	22	20	39	3.54	+ 1.19	0.80	0	9	19	2	9	ne.	City of Jackson.
Jeddo.	667	24	44.8	+ 1.8	79	23	25	20	40	2.91	+ 0.76	0.70	T.	10	12	5	13	ne.	William Bice.	
Johannesburg.	Otsego.	0	42.0	.....	80	23	21	20	40	2.00	.....	0.67	T.	9	14	7	9	w.	Alex Becker.	
Kalamazoo.	Kalamazoo.	955	37	46.8	0.0	71	23	21	8	36	2.00	.....	0	17	5	8	n.	Kalamazoo Asylum.		
Lansing (Agricultural College).	Ingham.	803	49	45.9	+ 0.4	79	24	22	20	37	3.10	+ 0.56	1.15	0	11	13	6	11	ne.	U. S. Weather Bureau.
Lansing (Capitol).	do.	881	26	46.8	+ 1.0	80	24	23	20	38	3.33	+ 0.87	1.20	0	11	13	2	15	nw.	State Board of Health.
Lapeer.	Lapeer.	827	14	46.2	+ 2.1	81	24	22	14 ^f	37	3.35	+ 1.39	0.78	0	7	18	5	10	se.	Michigan Home.
Ludington.	Mason.	637	15	42.6	+ 1.4	72	23	24	20	27	2.24	- 0.19	1.00	T.	7	16	4	10	s.	U. S. Weather Bureau.
Luther.	Lake.	1,028	3	44.3	+ 1.4	78	23	15	20	41	2.53	.....	0.67	T.	9	14	7	9	w.	John W. Nicholson.
Macatawa.	Cheboygan.	592	22	37.9	- 0.2	70	19	18	26	38	.....	.....	.....	.....	.....	.....	.....	.....	.....	Grand Rapids & Indiana Ry.
Mancelona.	Antrim.	1,121	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Do.
Manistee.	Manistee.	600	16	45.6	+ 3.0	85	24	20	21	54	0.95	- 1.53	0.55	T.	2	13	9	8	nw.	Pere Marquette R. R.
Marshall.	Calhoun.	896	1	50.24	.....	79 ^a	24	26	21	35 ^a	1.80	- 0.45	0.65	0	6	16	1	13	sw.	E. B. Stuart.
Midland.	Midland.	604	14	47.0	+ 2.4	82	24	20	20	45	1.80	.....	0.45	0	6	16	1	13	nw.	Pere Marquette R. R.
Morenci.	Lena we.	811	6	48.0	.....	81	24	26	20 ^f	38	3.24	.....	1.00	0	10	16	1	13	nw.	George J. Tripp.
Mount Clemens.	Macomb.	615	13	47.6	+ 2.6	83	22	25	21	39	2.16	+ 0.47	0.90	0	9	13	3	14	nw.	Waterworks.
Mount Pleasant.	Isabella.	826	14	43.6	- 1.8	74	20	19	21	50	1.90	- 0.12	0.90	0	4	14 ^a	8 ^a	7 ^a	nw.	Pere Marquette R. R.
Muskegon.	Muskegon.	587	17	46.2	+ 2.2	75	23	27	20	33	2.05	- 0.17	0.50	0	8	18	4	8	sw.	Grand Rapids & Indiana Ry.
Old Mission.	Grand Traverse.	858	19	42.4	- 0.3	82	23	21	21	38	2.97	+ 0.73	1.12	0	7	13	9	8	n.	E. O. Ladd.
Olivet.	Eaton.	934	23	47.3	+ 1.9	78	23 ^f	24	24	38	3.49	+ 0.62	0.98	T.	10	15	3	12	ne.	G. A. Knapp.
Onaway.	Arenac.	616	14	46.2																

TABLE 1.—Climatological data for April, 1913. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.				
				Mean.	Departure from the normal.		Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.		Greatest in 24 hours.	Total snowfall, unmodified.	Number of rainy days.					
					High.	Low.							Date.	Lowest.	Greatest in 24 hours.	Total.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Ohio—Continued.																						
Conneaut.	Ashland.	675	3	46.8	-1	81	24	24	21	39	2.44	.....	0.70	0	8	10	13	sw.	E. L. Ransom.		
Findlay.	Hancock.	776	24	48.8	+ 0.4	85	25	24	21	43	3.86	+ 0.99	1.02	0	10	22	1	7	ne.	Dr. E. A. Moser.		
Fremont.	Sandusky.	628	11	50.6	+ 2.1	84	25	28	21	36	3.89	+ 0.38	0.86	0	8	18	0	12	sw.	E. Stanley Thomas.		
Hedges.	Paulding.	725	19	44.4	- 0.7	82	25	25 ^b	7 ^a	41 ^b	4.05	+ 1.10	1.72	0	7	19	5	9	sw.	Charles Stutzman.		
Hillhouse.	Lake.	997	20	46.1	+ 1.1	93	25	19	21	39	2.46	- 0.41	0.86	0	8	16	5	9	ne.	J. W. Doncaster.		
Hiram.	Portage.	1,260	33	48.2	+ 1.7	82	25	24	21	39	2.97	- 0.06	0.55	T.	12	11	10	9	nw.	Prof. G. H. Colton.		
Hudson.	Summit.	1,123	52	49.9	+ 3.4	89	22	23	21	45	2.73	+ 0.03	0.60	0	11	16	5	9	ne.	Dr. W. I. Chamberlain.		
Lima.	Allen.	875	14	48.8	+ 0.4	80	25	26	7	35	3.72	+ 0.22	1.04	0	11	20	2	8	ne.	Miss Ollie DeLong.		
Medina.	Medina.	944	25	48.6	+ 1.1	85	25	19	21	43	2.79	- 0.35	0.65	0	8	15	2	13	n.	F. W. Clark.		
Montpelier.	Williams.	880	21	48.8	+ 1.1	80	24	26	20	38	3.34	+ 0.27	1.38	0	9	15	2	13	n.	G. L. Laser.		
Napoleon.	Henry.	680	26	48.8	+ 0.2	80	24	27	7 ^a	40	2.61	- 0.06	0.50	0	8	18	1	11	n.	A. C. Senter.		
New Bremen.	Auglaize.	1,038	20	49.4	- 0.4	80	24	26	7 ^a	36	3.09	+ 0.53	0.51	T.	12	10	10	10	nw.	Miss Lillian Grothaus.		
North Royalton.	Cuyahoga.	1,000	20	48.0	+ 1.0	82	25	24	8	37	2.45	- 0.03	0.77	0	8	13	10	7	w.	W. S. Edgerton.		
Norwalk.	Huron.	719	27	49.0	+ 1.7	85 ^b	25 ^b	23	21	49	2.76	+ 0.30	0.57	0	9	12	7	11	w.	Giles R. Gregory.		
Oberlin.	Lorain.	855	38	48.9	+ 1.4	85	25	22	21	39	2.52	- 0.18	0.53	0	8	13	7	10	ne.	Prof. F. F. Jewett.		
Ottawa.	Putnam.	720	20	48.8	- 0.8	82	24	22	15	38	2.59	- 0.44	0.83	0	8	9	11	10	sw.	Prof. J. T. Maidlow.		
Sandusky.	Erie.	629	36	48.6	+ 1.3	81	24	33	21	33	2.10	- 0.45	0.50	T.	10	9	9	12	ne.	U. S. Weather Bureau.		
Tiffin.	Seneca.	775	31	49.7	+ 0.8	81	25	27	8	36	4.04	+ 1.06	0.74	T.	11	16	4	10	n.	Prof. T. H. Sonnedecker.		
Toledo.	Lucas.	769	42	48.4	+ 1.1	80	25	29	8	31	2.37	+ 0.09	0.56	0	8	15	3	12	n.	U. S. Weather Bureau.		
Upper Sandusky.	Wyandot.	854	30	49.6	- 0.3	81	25	25	7 ^a	45	4.30	+ 1.06	0.85	0	8	14	7	9	w.	Robert E. Tracht.		
Vickery.	Sandusky.	588	20	48.6	+ 0.8	83	25	24	21	35	2.69	- 0.29	0.66	0	11	14	5	11	sw.	John W. Barr.		
Wapakoneta.	Auglaize.	898	1	48.5	- 0.8	80	24*	26	7	35	3.29	- 0.03	0.57	T.	11	13	8	12	nw.	Dr. William Kayser.		
Watseon.	Fulton.	780	41	48.1	+ 1.0	81	25 ^b	25	8	40	3.03	- 0.03	0.75	0	10	13	5	12	ne.	Thomas Mikesell.		
Wickliffe.	Lake.	740	1	2.71	0	10	13	5	12	ne.	C. M. Richardson.
Pennsylvania.																						
Erie.	Erie.	658	40	46.2	+ 1.5	78	24	29	21	29	2.03	- 0.37	0.76	0.2	12	11	10	9	w.	U. S. Weather Bureau.		
New York.																						
Adams Center.	Jefferson.	540	22	48.4	+ 5.0	88	26	22	20	37	2.86	+ 0.21	1.32	2.0	9	18	5	7	w.	A. E. Cooley.		
Angelica.	Allegany.	1,340	30	44.9	+ 1.6	82	25	17	21	44	3.86	+ 0.94	1.30	1.5	10	6	11	13	nw.	C. P. Arnold.		
Appleton.	Niagara.	270	22	45.3	+ 1.4	76	24	27	21	32	3.80	+ 1.53	1.05	T.	9	13	6	11	n.	H. A. Van Wagoner.		
Auburn.	Cayuga.	715	44	48.4	+ 3.4	86	25	25	8 ^b	34	1.45	- 1.07	0.62	0	7	19	7	4	n.	A. H. Underwood.		
Avon.	Livingston.	785	18	48.2	+ 3.7	83	24	26	8 ^b	34	2.74	+ 0.65	0.61	T.	11	10	11	9	n.	W. G. Markham.		
Brockport.	Monroe.	537	17	45.0	+ 2.7	81	24	26	20	37	3.78	+ 1.33	1.23	0.5	12	12	7	11	sw.	U. S. Weather Bureau.		
Buffalo.	Erie.	767	62	45.0	+ 2.7	81	24	26	20	37	3.78	+ 1.33	1.23	0.5	12	12	7	11	ne.	Do.		
Canton.	St. Lawrence.	448	19	45.4	+ 2.9	85	26	22	20	31	3.55	+ 1.09	1.58	2.4	13	14	8	8	n.	J. H. Grapotte.		
Cape Vincent.	Jefferson.	246	8	43.9	- 0.8	82	26	24	2	36	3.21	- 1.18	1.18	7	14	7	9	n.	W. R. North.			
Chazy.	Clinton.	151	13	46.2	+ 3.7	85	26	22	9	37	4.04	- 0.84	0.74	0.34	3.0	4	14	8	n.	Chas. Peterson.		
Chestnut Lawn.	Wyoming.	1,090	1	47.2	- 0.8	83	25	24	20	39	4.46	- 0.65	1.60	1.0	13	15	9	6	w.	W. N. Thayer.		
Dannemora.	Clinton.	1,490	8	45.0	- 0.8	84	26	12	9	35	2.82	- 0.65	1.32	4.5	7	15	4	11	w.	Jos. S. Willford.		
Elba.	Genesee.	500	14	44.4	+ 1.8	81	25	21	6	33	3.26	+ 0.12	0.58	T.	8	20	3	7	sw.	Dana H. Wells.		
Fayetteville.	Onondaga.	530	12	48.9	+ 3.3	85	25	22	8	34	2.05	- 0.70	0.66	T.	10	16	5	9	nw.	Sanitarium.		
Gabrels.	Franklin.	1,729	11	42.8	- 0.8	85	26	15	9	47	2.90	- 0.30	1.27	2.0	12	14	7	9	n.	Agricultural Exp. Station.		
Geneva.	Ontario.	0	48.4	84	24	24	20	41	3.45	0.96	0.5	11	.....	.....	.....	.....	.....	.....	.....	.....
Harkness.	Clinton.	622	11	45.6	+ 4.0	85	26	20	9	33	1.82	+ 0.14	0.72	3.0	12	23	5	2	w.	J. W. Harkness.		
Hemlock Lake.	Livingston.	900	15	45.4	+ 2.2	81	25	26	8	30	4.16	+ 1.60	2.32	1.0	9	16	6	n.	B. P. McGrady.			
Hunt.	do.	1,321	14	47.8	+ 3.3	87	24	22	8	42	5.05	+ 2.09	1.75	2.0	9	11	11	8	n.	W. S. Barager.		
Ithaca.	Tompkins.	928	35	48.1	+ 3.9	85	25	37	18	37	1.49	- 0.80	0.77	0.8	12	17	5	8	nw.	U. S. Weather Bureau.		
Keene Valley.	Essex.	1,000	15	45.4	+ 4.0	91	25	12	10	51	2.56	- 0.17	0.63	6.5	18	17	5	8	n.	E. R. Wells.		
King Ferry.	Cayuga.	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake George.	Warren.	350	16	48.2	+ 4.5	86	25	24	8	40	4.40	- 0.46	0.81	17.8	15	9	6	6	n.	Chas. Forstel.		
Lake Placid Club.	Essex.	1,864	5	36.6	- 0.8	78	26	10	9	47	4.46	- 0.46	0.81	1.32	10	15	9	6	sw.	H. Van Hoevenberg.		
Lauterbrunnen.	Wyoming.	1	47.4	85	25	25	8	38	4.40	1.45	0.5	0.5	1.45	0.5	12	12	9	9	n.	Jas. O. Howard.		
Lockport.	Niagara.	520	26	45.8	+ 0.6	80	24	26	8	30	4.01	+ 1.78	1.28	T.	5	14	8	8	sw.	R. N. Clark.		
Lowville.	Lewis.	900	46	47.3	+ 4.8	84	25 ^b	24	20	42	2.28	+ 0.04	0.52	1.0	11	12	16	2	n.	W. F. H. Breeze.		
Mofra.	Franklin.	200	13	45.4	+ 2.8	87	26	18	5	40	2.44	- 0.04	1.00	5.0	8	11	13	6	w.	C. E. McBride.		
Nehasane.	Hamilton.	1,750	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Lake.	Herkimer.	1,822	12	42.8	- 0.8	85	25	13	8	41	2.34	- 0.30	0.49	4.0	9	15	7	8	n.	L. W. Brown.		
Ordensburg.	St. Lawrence.	175	29	46.3	+ 2.3	86	26	26	9	47	2.87	+ 0.78	1.10	1.0	9	14	12	4	s.	J. F. Redmond.		
Old Forge.	Herkimer.	1,735	3	42.4	- 0.8	83	25	11	20	41	2.93	- 0.30	0.60	2.3	13	11	6	13	w.	State Hospital.		
Oswego.	Oswego.	335	43	45.4	+ 2.2	85	26	27	20	36	2.23	- 0.03	0.69	T.	11	15	3	12	w.	Mrs. S. W. Nelson.		
Palermo.	Cattaraugus.	1,410	9	49.0	.....	82	25	19	8	41	1										

TABLE 2.—*Daily precipitation for April, 1913. District No. 4, Lake Region.*

TABLE 2.—*Daily precipitation for April, 1913. District No. 4—Continued.*

Stations.	Watershed.	Day of month.																													Total		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
<i>Lower Peninsula—Continued.</i>																																	
Big Rapids.	Muskegon.	.24	.70	.30							.45																						1.92
Blissfield.	Raisin.	.39	.29	.12						T.	.58	.20																				2.34	
Bloomingdale.	Lake Michigan.	.10	.40	.10						.10	.10	T.																			1.43		
Cadillac.	Manistee.	.22	.33	.32							.56	.05																			2.45		
Cassopolis.	St. Joseph.																																
Charlevoix.	Lake Michigan.	.20	.08	.62							.70																				3.80		
Charlotte.	Kalamazoo.	1.00	.21								.54																				2.21		
Cheboygan.	Cheboygan.	.30	.50	.90							.30	T.																			2.45		
Clinton.	Raisin.	.62	.41	.12						T.	.77	.24																			3.21		
Coldwater.	St. Joseph.	.38	.56	.50							.10	.75																			3.21		
Croton.	Muskegon.	.45	.92	.40							.62	.07	.55																	3.53			
Detroit.	Detroit.	.43	.35	.06						T.	1.19	.02	T.																	2.87			
Durand.	Saginaw.	.23	.68	.21	T.						.48	.06																		2.26			
East Tawas.	Lake Huron.	.80	.30	.80							.15																			2.71			
Eloise.	Rouge.	.40	.30	.03	T.						1.05	.40																	3.28				
Five Channels.	Au Sable.	1.40	.49	.45							1.02	.09																		3.31			
Flint.	Saginaw.	.25	.90	.45							.15	.50	.04																	3.59			
Frankfort.	Betsey.	.50	1.00	.30							.65																			2.75			
Ganges.	Lake Michigan.	.86	.45	.46							.06	.44																		2.93			
Gaylord.	Cheboygan.																																
Gladwin.	Saginaw.	1.0	.20								2.50																			4.05			
Grand Haven.	Grand.	.49	.64	.03							.03	.38	.02	T.															2.08				
Grand Rapids.	do.	.44	.74	.05							.02	.48	.01																2.46				
Grape.	Raisin.	.45	.73	.17							T.	.68	.13																3.14				
Grass Lake.	Grand.	.80	.55	.30							.75	.05																	2.88				
Grayling.	Au Sable.																																
Greenville.	Grand.																																
Harbor Beach.	Lake Huron.	1.00	.50								1.20	.20																		3.70			
Harrison.	Saginaw.	.84	.87	.52																											3.22		
Harrisonville.	Lake Huron.	.20	1.36	.70	.10	.02						.73	.18																4.18				
Hart.	Pentwater.	.20	.10									.73	.42																	1.81			
Hayes.	Pigeon.	.15	.75									1.15																		2.93			
Hightland.	Huron.	.34	.73	.56								.71	.35																	3.67			
Hillsdale.	St. Joseph.																																
Holland.	Lake Michigan.	.26	.66	.27							.03	.43	.02																	2.13			
Houghton Lake.	Au Sable.	.31	1.23	.32	.08							.49																		3.42			
Howell.	Saginaw.	.90	.17									.48	.44																	3.05			
Ivan.	Manistee.	.14	.10	.15	.05							.50	.01																	1.56			
Jackson.	Grand.	.80	.58	.44								.65	.10																	3.54			
Jeddo.	St. Clair.	.19	.70	.13	T.							.68	.32																	2.91			
Johannesburg.	Cheboygan.		.09	.04								.07	T.																				
Kalamazoo.	Kalamazoo.	.35	.50	.25								.08																					
Lansing (Agr. Col.).	Grand.	.35	.89	.29								.05	.49	.01																3.10			
Lansing (Capitol).	do.	.63	1.20	.02								.28	.22	.05															3.33				
Lapeer.	Saginaw.	.78	.46									.05	.22																3.35				
Ludington.	Pere Marquette.	.69	.43	.23							.01	.61	.03																2.24				
Luther.	Manistee.	.30	.67	.48								.68	.14																	2.83			
Mackinaw.	Lake Huron.																																
Mancelona.	Lake Michigan.																														0.95		
Maristee.	Manistee.																																
Marshall.	Kalamazoo.																																
Midland.	Saginaw.	.35	.66	.30								.65	.10																	1.80			
Morenci.	Maumee.	.44	.25	.10							.06	1.00	.16																3.24				
Mount Clemens.	Clinton.	.02	.06	.15	T.							.90	.20																2.16				
Mount Pleasant.	Saginaw.	.16	.76									.90	.08																1.90				
Muskegon.	Muskegon.	.50	.20	.35								.05	.50	.10															2.05				
Old Mission.	Lake Michigan.	.14	1.12	.38								.78																	2.97				
Olivet.	Kalamazoo.	.55	.66	.98	T.								.48	.12															3.29				
Omer.	Cheboygan.																																
Onaway.	Saginaw.	.35	.65	.80									.68																	3.94			
Owosso.	T.	.T.	.12	T.									.10																	0.60			
Petoskey.	Lake Michigan.	1.00	.48	.20									.95	.57															4.11				
Plymouth.	Clinton.	.24	.87	.34	T.								.67	.30	T.														3.13				
Port Austin.	Lake Huron.	1.17	.75										1.15	.33															4.29				
Port Huron.	St. Clair.	.23	.89	.23	T.								.74	T.																			

TABLE 2.—*Daily precipitation for April, 1913. District No. 4—Continued.*

^a Estimated from records of surrounding stations.

* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—*Maximum and minimum temperatures for April, 1913. District No. 4, Lake Region.*

Date.	Duluth Minn.		Wisconsin.				Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.						Lower Michigan.											
			Florence.	Green Bay.	Milwaukee.						Escanaba.	Ewen.	Houghton.	Marquette.	Sault Ste. Marie.		Alpena.	Battle Creek.	Cadillac.									
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.								
1....	52	32	48	26	55	35	58	40	60	40	56	39	50	25	45	24	25	43	29	33	25	44	28	54	36	46	28	
2....	44	31	45	31	44	38	53	36	68	41	60	43	43	31	40	26	42	30	45	31	44	26	40	29	53	38	47	30
3....	31	29	34	32	39	34	62	36	71	43	65	50	35	31	35	31	34	30	33	31	34	31	35	32	68	38	45	34
4....	39	27	34	27	34	30	39	32	50	39	62	38	32	28	32	25	30	27	31	26	37	35	30	59	53	49	29	
5....	39	26	35	23	41	29	47	34	51	36	48	33	38	29	37	19	37	25	27	32	25	34	28	43	30	34	27	
6....	35	26	37	22	44	30	45	33	45	35	48	30	37	26	38	15	33	24	33	25	32	23	36	27	49	30	38	26
7....	31	23	41	19	38	26	39	32	39	32	40	27	40	21	44	13	34	23	34	24	39	22	37	26	41	27	42	22
8....	33	27	40	18	44	30	41	33	43	34	46	28	38	20	42	24	38	20	38	18	45	26	39	28	48	26	44	25
9....	35	30	40	28	43	36	38	35	41	36	35	39	26	44	17	39	28	39	23	46	39	38	28	45	32	41	29	
10....	39	30	40	30	38	33	46	35	63	40	58	41	37	32	35	27	37	33	34	31	38	32	38	34	56	37	40	32
11....	41	32	34	30	36	33	43	36	47	38	50	41	35	32	37	31	40	33	35	31	37	34	50	36	44	42	43	35
12....	48	29	48	23	43	32	37	34	39	36	44	40	44	28	13	43	26	37	28	47	28	45	33	41	35	40	31	
13....	57	35	57	27	62	31	49	33	47	38	49	36	54	28	61	26	47	25	48	30	51	24	51	28	56	33	55	26
14....	41	29	54	24	44	31	45	34	47	38	56	37	39	27	59	19	46	27	43	26	47	25	42	30	55	33	54	27
15....	79	34	72	27	65	32	51	35	51	38	60	34	44	28	71	30	66	26	73	38	59	27	46	29	63	28	64	27
16....	47	36	63	32	49	40	66	44	71	45	73	41	55	33	69	28	50	33	52	31	60	34	59	31	68	33	63	37
17....	70	38	71	37	74	42	78	47	77	48	72	43	47	33	67	37	67	34	70	46	58	33	59	34	71	32	66	35
18....	58	40	62	40	64	39	68	40	71	42	75	52	50	33	60	38	50	34	51	36	43	31	70	38	71	45	68	39
19....	46	32	44	28	50	34	51	34	48	39	57	38	40	26	43	28	40	26	36	28	31	25	41	28	58	33	47	26
20....	44	28	53	18	50	29	40	30	41	33	51	29	40	22	60	28	48	21	43	25	40	21	46	24	54	21	49	20
21....	68	37	68	28	60	31	60	34	66	38	64	35	42	32	65	21	62	28	53	33	53	24	60	28	68	32	55	27
22....	60	43	73	53	76	55	78	54	78	49	55	34	71	50	68	36	70	53	63	35	63	49	78	40	67	49	73	
23....	65	41	73	55	78	61	80	50	80	62	78	61	62	41	80	59	81	52	84	55	76	45	82	48	79	55	73	55
24....	55	34	71	51	73	53	73	47	73	53	78	58	49	42	73	58	75	50	75	76	44	58	46	80	54	71	55	
25....	54	31	61	40	53	42	51	43	53	44	65	44	52	36	60	48	56	38	60	40	58	37	63	40	51	50	64	41
26....	37	26	52	29	58	36	55	42	57	44	56	41	50	33	58	41	40	33	46	35	52	34	43	40	55	40	52	37
27....	41	25	54	27	53	33	48	33	47	39	52	38	38	30	62	28	45	31	40	32	53	31	49	38	53	40	55	30
28....	48	31	59	28	54	37	50	39	47	40	50	38	50	33	62	21	53	30	46	33	56	34	57	37	60	39	60	29
29....	49	35	68	27	64	38	55	38	54	42	63	42	51	36	75	25	62	31	62	34	60	32	59	38	63	37	66	34
30....	76	42	81	37	77	45	62	44	72	46	70	42	52	38	83	36	86	35	83	42	70	34	61	37	72	36	68	40
Mns..	48.7	32.0	53.2 ^a	29.8 ^a	53.4	36.4	53.5	37.9	56.6	41.1	59.0	40.1	44.9	30.7	55.2	29.5	49.9	30.6	40.1	33.2	49.0	29.8	49.5	33.4	58.3	36.9	53.5	32.7

Date.	Lower Michigan.				Ohio.				Erie, Pa.	New York.				Vermont.															
	Detroit.		Muskegon.		Saginaw, west side.		Cleveland.			Lima. ^{§§}		Sandusky.		Toledo.			Buffalo.		Canton.		Rochester.		Syracuse.		Burling- ton.		North- field.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	54	35	44	37	53	32	48	40	57	37	52	39	57	39	43	34	42	27	40	30	44	30	38	31	36	30			
2....	48	38	46	38	48	40	48	40	62	38	47	40	47	39	51	37	47	27	47	31	49	31	45	34	44	31			
3....	63	38	57	43	59	40	69	44	66	40	67	42	65	40	67	39	60	39	37	30	55	38	58	37	40	30			
4....	60	35	55	37	53	32	65	37	60	58	63	38	61	37	67	38	61	35	54	33	70	41	45	33	37	32			
5....	42	32	40	34	39	31	43	36	49	36	46	35	46	34	39	32	35	29	47	30	43	31	43	31	44	30			
6....	46	31	39	33	44	30	39	32	50	29	44	33	48	33	34	30	32	27	37	28	33	27	39	20	39	29			
7....	39	29	46	28	37	29	34	30	43	26	36	33	36	32	38	30	40	26	40	29	42	31	37	28	35	26			
8....	44	28	49	28	44	28	39	34	50	27	41	34	41	29	40	32	42	30	43	30	41	28	42	25	41	20			
9....	44	34	44	36	47	32	54	35	50	33	44	37	42	36	43	31	45	28	38	24	39	34	41	21	36	18			
10....	53	37	55	38	49	36	55	45	59	41	56	39	54	39	49	40	48	33	49	31	57	37	64	21	50	18			
11....	51	42	55	36	51	40	58	42	50	43	54	43	52	43	59	43	54	37	54	39	61	45	56	41	47	37			
12....	47	37	42	35	41	40	47	36	48	40	46	38	48	40	52	37	55	41	51	41	52	42	53	41	51	36			
13....																													